electrodes being divided into a plurality of electrode cells; and

a photoelectric transfer part sandwiched between the first and second transparent electrodes, the photoelectric transfer part being common to the plurality of electrode cells,

wherein the first and second transparent electrodes, and the photoelectric transfer part are arranged in an optical path so that light transmitted in the optical path passes through the photodetector, and

wherein the photodetector is configured to receive the light from both surfaces.

4. (Amended) The transmission photodetector according to claim 1, wherein the photoelectric transfer part comprises an organic p-type semiconductor layer stacked on the first transparent electrode, and an organic n-type semiconductor layer stacked on the organic p-type semiconductor layer, and

wherein the second transparent electrode is stacked on the organic n-type semiconductor layer.

5. (Amended) A transmission photodetector comprising:

a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film, stacked on the transparent semiconductor layer, absorbing light in a wavelength band including a predetermined wavelength;

a second transparent electrode; and

a carrier transporting layer sandwiched between the sensitizing dye film and the second transparent electrode,

wherein at least one of the first and second transparent electrodes is divided into a plurality of electrode cells,

wherein the first transparent electrode, the transparent semiconductor layer, the

sensitizing dye film, the carrier transporting layer, and the second transparent electrode are arranged in an optical path so that light transmitted in the optical path passes through the photodetector, and

wherein the photodetector is configured to receive the light from both surfaces.

Cont'd

6. (Amended) A transmission photodetector comprising:

a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film, stacked on the transparent semiconductor layer, absorbing light in a wavelength band including a predetermined wavelength;

a second transparent electrode; and

a dielectric layer sandwiched between the sensitizing dye film and the second transparent electrode,

wherein at least one of the first and second transparent electrodes is divided into a plurality of electrode cells,

wherein the first transparent electrode, the transparent semiconductor layer, the sensitizing dye film, the dielectric layer, and the second transparent electrode are arranged in an optical path so that light transmitted in the optical path passes through the photodetector, and

wherein the photodetector is configured to receive the light from both surfaces.

7. (Amended) A transmission photodetector comprising:

a first transparent electrode;

an organic p-type semiconductor layer stacked on the first transparent electrode;

an organic n-type semiconductor layer stacked on the organic p-type semiconductor layer; and

a second transparent electrode stacked on the organic n-type semiconductor layer,

wherein at least one of the first and second transparent electrodes is divided into a plurality of electrode cells,

a4 End

wherein the first transparent electrode, the organic p-type semiconductor layer, the organic n-type semiconductor layer, and the second transparent electrode are arranged in an optical path so that light transmitted in the optical path passes through the photodetector, and

wherein the photodetector is configured to receive the light from both surfaces.

8. (Amended) A stacked type photodetector comprising:

a first transmission photodetector configured to carry out a photoelectric transfer with respect to light in a first wavelength band including a predetermined wavelength; and

a second photodetector, stacked on the first transmission photodetector, configured to detect light passing through the first transmission photodetector,

wherein the first and second photodetectors are arranged in an optical path so that light transmitted in the optical path passes through the stacked type photodetector, and

wherein the stacked type photodetector is configured to receive the light from both surfaces.

10. (Amended) The stacked type photodetector according to claim 8, wherein the

a5 first transmission photodetector comprises:

a first transparent electrode;

a transparent semiconductor layer stacked on the first transparent electrode;

a sensitizing dye film stacked on the transparent semiconductor layer;

a second transparent electrode; and

a dielectric layer sandwiched between the sensitizing dye film and the second transparent electrode.

13. (Amended) The stacked type photodetector according to claim 9, wherein the second photodetector has a third transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the third transparent electrode of the second photodetector is divided into a plurality of electrode cells.

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14. (Amended) The stacked type photodetector according to claim 10, wherein the second photodetector has a third transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the third transparent electrode of the second photodetector is divided into a plurality of electrode cells.

15. (Amended) The stacked type photodetector according to claim 11, wherein the second photodetector has a third transparent electrode, and at least one of the first or second transparent electrode of the first photodetector and the third transparent electrode of the second photodetector is divided into a plurality of electrode cells.

16. (Amended) The stacked type photodetector according to claim 8, further comprising a transparent substrate provided between the first and second photodetectors, the transparent substrate including two principal planes placed on opposite sides,

wherein the first transmission photodetector comprises a first and second transparent electrodes, the second transparent electrode being provided on one principal plane of the transparent substrate, the second photodetector has a third transparent electrode provided on the other principal plane of the transparent substrate.

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19. (Amended) The stacked type photodetector according to claim 17, wherein the plurality of electrode cells are disposed symmetrically with respect to a center on the optical axis of incident light.

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21. (Amended) The stacked type photodetector according to claim 17, further comprising a signal processor, integrally provided with the photodetector, configured to